THESES

Examination of the features of the groups of talented 14–16 year-old students trained on the fields of music, dance, dramatic art, fine and applied arts with psychometric and pedagogical means

PhD dissertation

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PURPOSE OF MY RESEARCH

- To become acquainted with the abilities of the students more objectively
- To use the results of my researches and my measurement methodological developments in the training of artistic talents
- To create a possible basis for the preparation of programmes, plans, duties etc. to develop the artistic talents
- To make the expensive education/training of the artists more effective
- To obtain an insight into the process of the 14-16-aged talents becoming artists

RAISING A PROBLEM

1. The artist-teachers seldom use the kind of means of measurement and examination methods with which they could detect the abilities (beyond the artistic abilities) of their groups of students (students) that cannot be missed in the creative activity. (They can only form an opinion about the things like persistence, motivation, self-efficiency, miscarriage bearing, space-perception, flexible way of thinking etc.) If these are poor, it is difficult to become an artist, however one has the good special abilities.
2. In many schools, there are missing the developing programmes for the emotions, space-perception, emotional immune-competence, the factors of the creativity, or they are formed inaccurately or maybe just indicatively.
3. One cannot tell it without any examinations which are the elementary differences between the features of the groups of students practising the specific arts and those of the control group and it cannot be stated either on which fields one can find the strengths, weaknesses, irregularities in these groups. These pieces of information are necessary to the elaboration of the well-developing programmes, personality development, and lesson plans, to the selection of the developing exercises and the strategies of the teachers and to the methods of involving them in the training.
4. Without the above mentioned, we cannot talk about overlapping, planned training of the arts, just about education of the arts.

THEORETICAL BACKGROUND

In the talent pedagogy there are lot of notions of talent, models of talent, concepts living beside each other that are more or less coherent or detailed.

The notions of talent:

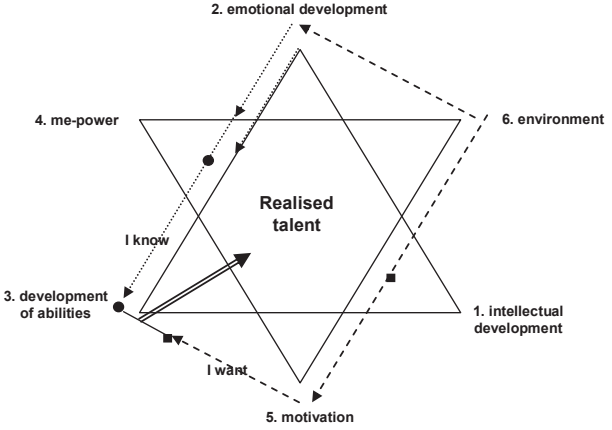
- Static, with descriptive character
- They contain the personal ability elements and those that are expected by the society

- They reflect an approach that belongs to a specific concept, field of science, talent image.

We call somebody talented who, through his inborn different abilities, exceeds the average performance on a cultural valuable field to a significant extent that is considered as relevant in his age of life or a performance appears in an unusually earlier age of life and it is carried out in an exact activity / creation, this way it becomes obvious and it can be also measured so. The outstanding abilities (talent) of the person can be developed in a supporting, developing environment more quickly but as a result of the hindering factors „they can also be lost". At the same time, one can also have deficits on other field of abilities beside the abilities far beyond the average.

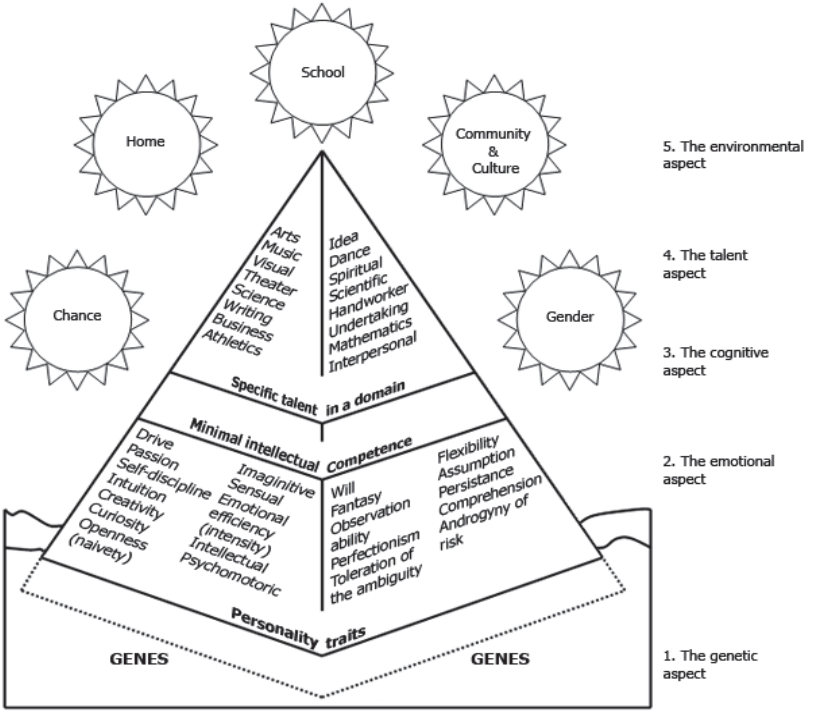
The principles of the models with system-approach:
- The whole is more than the sum of the parts;
- Not only the structure but the system of correlations are also outlined;
- They are dynamic;
- They are significant because of their functionality and usefulness.

My initial models are as follows:
1. *From the interactive talent-model of Landau* I adopted the importance of the support of emotions, the self-power environment and its system of correlations.



The interactive system of talent. Source: Landau, 1997, graphic 3, page 25

2. *On the top of the Pyramid model of Piirto* there are the „*specific abilities*" that are built on the „*minimum intellectual competence*". They are established by specific *personality features*. In the model, the creativity and the emotional intelligence and the abilities alike the psychological immune-competence are in the same status.



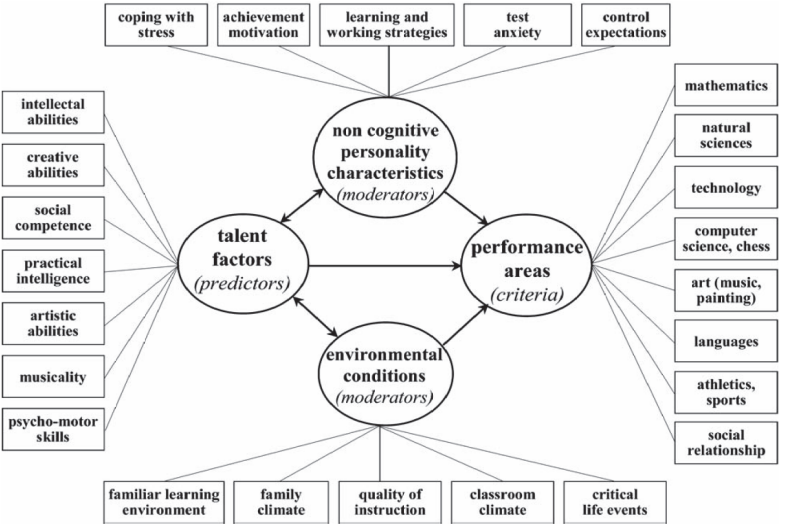
„Pyramid" talent model of Jane Piirto (1999)
Original source: Piirto (2007, Page 3) and the homepage of Jane Piirto:
http://works.bepress.com/jane_piirto/22/

3. *The Munich Model of Heller*
That is able:

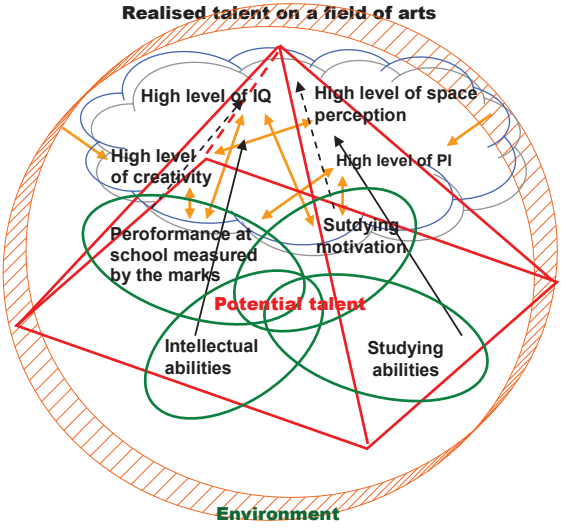
- To work out the effective talent developing *strategies and programmes*;
- To prepare the *integrated snapshot* with many factors;
- To detect the current *purposes of the performance and the performance*.

The main factors of the model:

(1) *Non-cognitive personality features*: they assist focusing on the task;
(2) *Environmental conditions:* external leaders that affect the performance through the atmosphere in the family and the school, the quality of the instructions from the environment, the conditions of studying and the critical events in life;
(3) *Talent factors:* shows where one calculate with the outstanding performances that can be also preferred by the environment and the society;
(4) *Fields of performances:* on which the activities are focusing, through forming the criteria that are typical for the fields.



The talent model of Munich (MMG), Heller et. Al. 2005.
Source: http://www.pabst-publishers.de/psychology-science/3-2004/05.pdf



My research model

THE RESEARCH

In my research I am investigating:

- *The difference between the groups of students who are studying fine and applied arts, music, dance and acting (together: arts students) in the age of 14-16 years on some fields of abilities like creativity, space-perception, the emotional intelligence and the psychological immune competence.*
- *What kind of special features of the arts do the students of the arts groups show?*
- *How are the differences between the genera formed in the single groups from the point of view of the specific variables?*

The used methods and instruments

- I joint the questionnaires and the tests to a package of measuring instruments through matching them with the rules of the test theory.
- A part of the package was used by standard measurements but it has not been tried on a special sample like this.
- One can investigate the specific students and groups too with this package of measuring-instruments.

The methods of research

Type of variable	**Content of the variable**	**The measuring instrument of the collection of facts**
Dependent variables	The **FIELD OF TALENT** of the students: on the basis of which the teacher can classify them in the specific group; He has been studying arts in an institution for at least 2 years.	***(1) The processing of the special literature*** ***(2) Interviews with the teachers***
Independent variables	**CREATIVITY** of the students of the groups and its partial fields: ***fluency, flexibility, originality, creativity kept within bounds***	***(3) The cub test*** *(measuring ability)* ***(4) Tangram*** *(measuring ability)*
	One variable of the **SPACE-PERCEPTION** of the students of the groups: like *the ability of determining the real picture and elements of an object after incomplete and crammed pieces of visual information* and its partial fields: ***counting of cubes, verbal justification***	***(5) Cub test*** *(measuring ability)*
	The ability of the groups of the students *to identify* the **EMOTIONS**	***(6) 8 picture sequences - 8 expression test*** *(ability measuring)*
	The **PSYCHOLOGICAL IMMUNECOMPETENCE** of the students of the groups and its partial fields: *optimism, control ability, coherence perception, self-respect, development feeling, source monitoring ability, source mobilizing ability, source creating ability, social monitoring ability, social mobilizing ability, social source creating ability, synchronous ability, persistence, impulsivity control, emotions control, excitability hindering* *Subsystems:* ***nearing-monitoring subsystem, creating-executing subsystem, self-regulation subsytem***	***(7) Psychological Immune-competence Questionnaire Junior*** *(self-declaration questionnaire)*
Background variables	**SOCIAL CIRCUMSTANCES** of the groups of students.	***(8) Students questionnaire***
	PERFORMANCE of the 8th class students on the basis of the average of the mid-year school report.	***(9) School documents analysis***
	GENERA OF THE STUDENTS.	***(10) Students questionnaire***

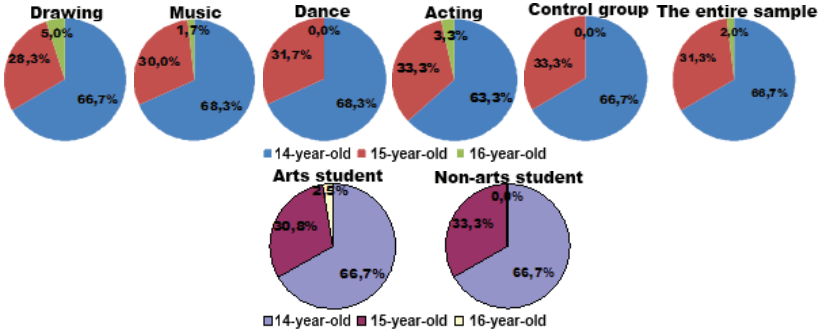
THE „GOODNESS INDICATORS" OF THE STATISTICS CALCULATED AFTER THE SAMPLES OF THE TESTS AND THE QUESTIONNAIRE

- *Reliability* (*test-retest; Cronbach α; Guttman split half*)
- *With Validity* examinations *(comparing with the standard tests)*

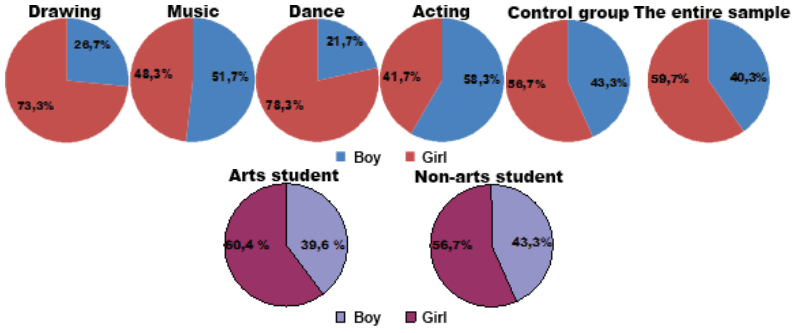
- With *statistical trials* referring to the examined example before the describing tables (*Levene-test*; *two samples t-trial, ANOVA test; Kruskal-Wallis-test; khi-square-trial; Cramer-indicator*) I controlled, they indicated the forecasting value of the test.
- *The significant results* can be used by the central curricular propositions too.
- *The non-significant results* show tendencies and they can be starting points of the local curriculum and the plans for the development of the teachers.

THE SAMPLE

- 300 14-16-year-old students took part in the measuring.
- 240 *persons have taken part in the artistic training for at least 2 years* on the specified fields.
- *The control group* (60 persons) *did not perform any significant artistic activity. .*
- *I did not examine the artistic abilities of the students,* their existence was a criteria.
- I collected the data between2005–2009 in six Hungarian municipal schools. I established the research with *pre-measurings*.



The division of the sample after age classes



The division of the sample after genera

THE RESULTS OF THE EXAMINATION OF THE BACKGROUND VARIABLES

- The characters of the family background:
- Performance at school
- Genera of the student

I created a cumulated background index (CSHT) from the family background variables. The performance at school roughly moves together with the family background index.

The results of the groups in the sample on the examined fields in the five groups

Groups	N	Family background index average	Average performance at school
Applied and fine arts	60	**71.78**	**71.00**
Music	60	**78.68**	**77.00**
Dance	60	**69.62**	**74.00**
Acting	60	**78.02**	**76.00**
Control group	60	**59.17**	**63.00**
Total	**300**	**71.45**	**72.20**

The results of the groups in the sample on the examined fields in the two groups

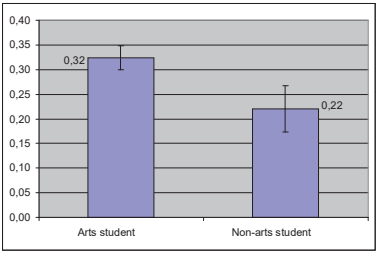
Groups	N	Family background index average	Average performance at school
Studying arts	240	**74.53**	**74.50**
Not studying arts	60	**59.17**	**63.00**
Total	**300**	**71.45**	**72.20**

THE RESULTS OF THE EXAMINATION OF CREATIVITY

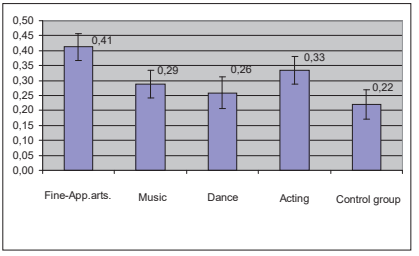
I examined the creativity with the Circle Test (fluency, flexibility, originality, elaboration) and the Tangram (creativity kept within bounds)

The answers given to the hypotheses:

- Those who are studying arts are more creative than those who are not
- But there is a big difference between the artistic groups too,
- In case of the arts students, the results of the boys and the girls are closer to each other than those by the students who are not studying arts.



The results of all factors of creativity in the two groups



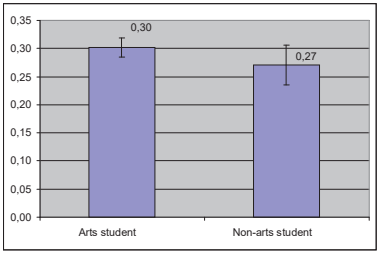
The results of all factors of the creativity in the five groups

- The results and the tendencies that can be demonstrated from the tests and the factors are more interesting than the main data.

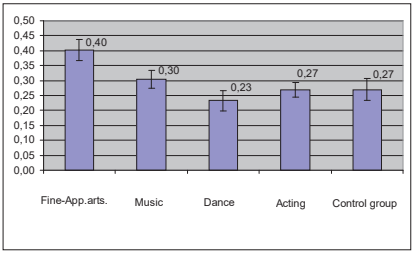
The results of the Circle test

The following results surprised me:

- There is only a small difference between the arts students and those who are not studying arts.
- The creativity of the dance students is smaller than that of the control group.
- That of the actors corresponds to the creativity of the control group.



The results of the Circle test in the two groups

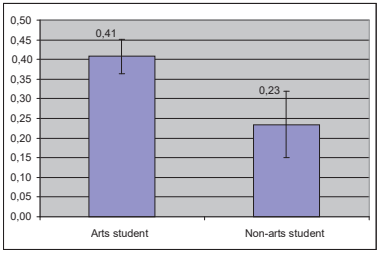


The results of the Circle test in the five groups

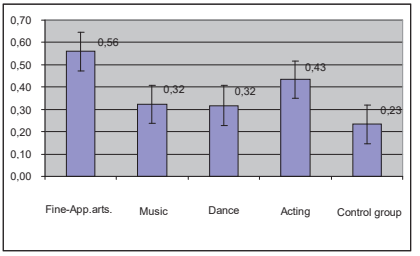
- However, when examining the factors of the test one cannot clearly state the characters of the groups, the differences within the groups can be rather seen because of the dispersion.
- The results (with exception of the fluency) can only be referred to the sample (statistical trials).

The results of the Tangram

- The duties of the Tangram were executed by the arts students much better.
- From them, the results of the students of fine and applied arts are the most outstanding.



The results of the factors of "creativity kept within bounds" in the two groups



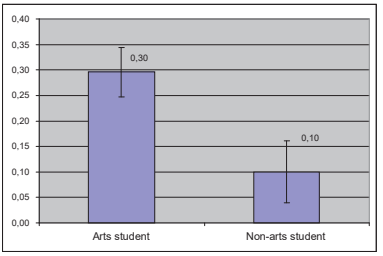
The results of the factors of "creativity kept within bounds" in the five groups

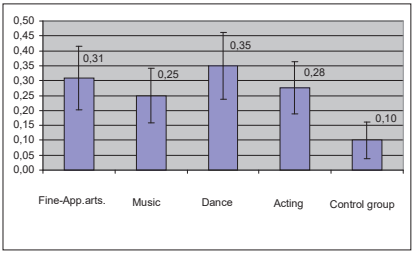
THE RESULTS OF THE EXAMINATION OF THE SPACE-PERCEPTION

I examined the space-perception with the Cube test (its factors: counting of cubes, verbal justification of the counting). This shows the abilities of the *visual grasp* and the *verbal-logical consciousness*.

The answers given to the hypotheses:

- The arts students reached a better result. (However, the difference is not of an astonishing extent)
- From the arts students, the students who are studying dance and fine and applied arts have the best space-perception, the poorest have the music students.

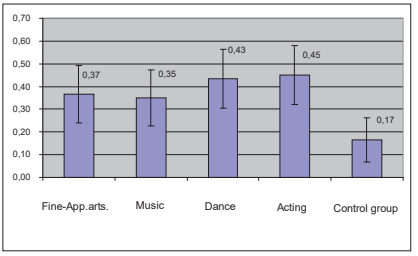




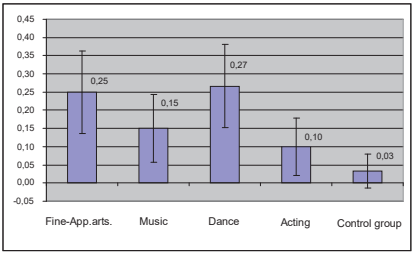
The results of the Cube test in the two groups

The arts students:

- Performed a three times better result in the entire test than the students who are not studying arts;
- Performed two and half times better in the duty of counting cubes;
- Performed six times better in the duty of verbal justification.
- Performed a better result in all groups as far as the duty of cube counting is concerned than in case of the verbal justification but by the students who are not studying arts the difference is more than twice between the average results of the two duties.
- The most astonishing is the result of the students who are studying acting because they performed the cube counting the best and the verbal justification the poorest.
- It is also astonishing that the fine and applied arts students who are considered as poor in the communication, were the most successful in the verbal justification.



The result of counting the cubes in the five groups



The results of verbal justification in the five groups

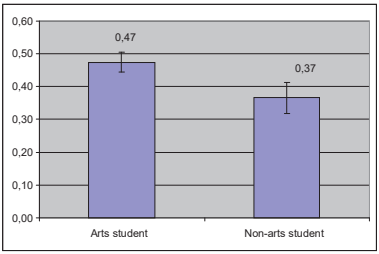
- The girls who are studying arts performed better than the boys who are not studying arts.
- The girls studying music performed an outstanding result.
- By the arts students, the boys and the girls performed the same result in case of the verbal justification, in the control group the boys were better than the girls.
- The dispersion is also high in the breaking down after genera in all artistic groups that are the reason why it would be reasonable to control the results with an other test.

THE RESULTS OF THE EXAMINATION OF THE EMOTIONAL INTELLIGENCE

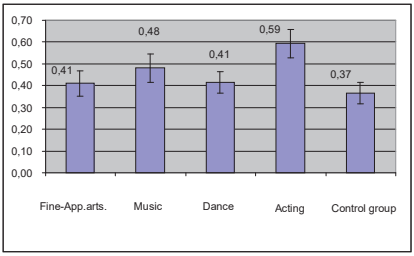
The parallel (A, B) row of items of the 8 picture sequences - 8 expressions test examines the detection of the emotions.

The answers given to the hypotheses:

- The emotional intelligence of the arts students is higher than that of the students who are not studying arts.
- There are big differences between the groups: there is one outstanding group of arts students, the students who are studying acting.



The results of the 8 picture sequence – 8 expressions in the two groups



The result of the 8picture sequences - 8 expressions in the five groups

- The result of the girls is better in all groups, this confirms the results of the previous researches but this difference is much smaller in case of the students who are dealing with arts.

After the results of comparing the factors of the 8 picture sequences – 8 expressions test and the PI excitability control and emotional control:

- By the students studying acting, the recognition of emotions is developed but they can control their feelings with difficulties.
- The ability of the music students to recognise the emotions is also developed (however, it falls behind that of the actors) and the values of their control functions is also high.
- As far as the recognition of the emotions is concerned, the dance students fall in the medium category but the control of the emotions is the highest by them.
- The results of the examination of the fine and applied arts students in connection with the recognition of the emotions and the control are around the average value of the sample.
- The control group is the poorest in the recognition of the emotions but the control of the emotions works by them well.

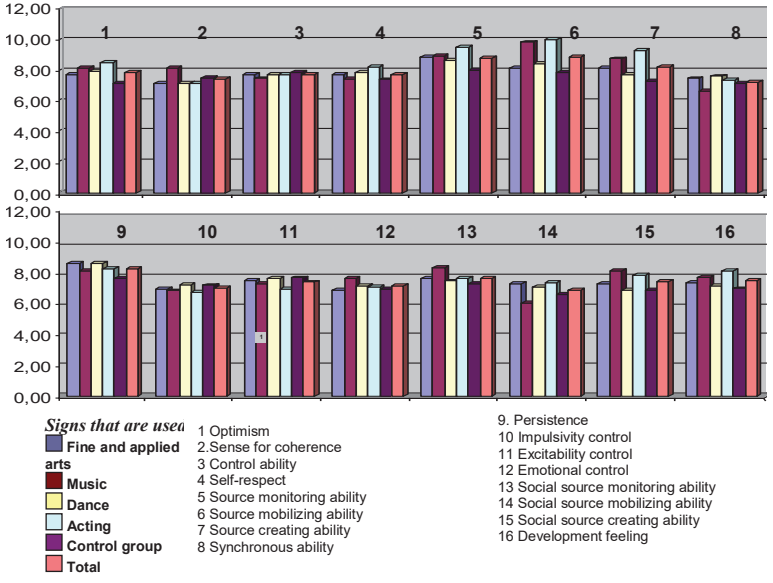
THE RESULTS OF THE PSYCHOLOGICAL IMMUNECOMPETENCE (PIK)

I measured the 16 factors of the PI with the Psychological Immune-competence Questionnaire Junior self-declaring test; with its help the groups can be described on the basis of the *typical and non-typical* answers.

Answers given to the hypotheses:
The psychological immune-competence of the arts students is better: they are more optimistic, more preserving, they are source monitoring ability (openness for the challenges), source mobilizing ability (feeling of the self-efficiency) and their source creating ability (witticism and ingenuity) are better. The above abilities together form the mobilizing-creating-executing subsystem.

These are the abilities that assist the setting of targets, creative searching for the sources in connection with them, having ability to plan and to execute and the fact that the students can get under the spell of their activity, that they are susceptible and open for the development and the modern things.

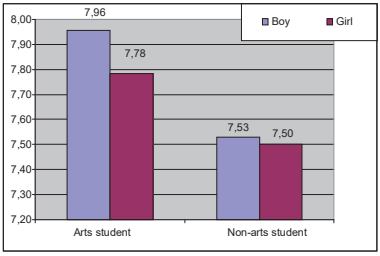
Their weakness is the control ability, the impulsivity control and excitability hindering. The low level of these abilities must have a positive influence on the success and it is mostly characteristic for the boys in my sample.



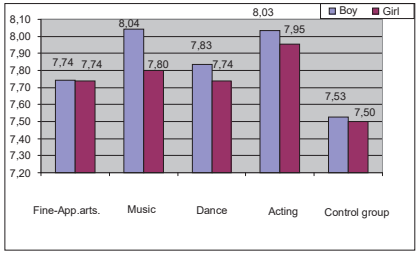
The values of the PIK factors in the five groups

- With the exception of the fine and applied arts students, the PI values of the boys are better in all groups.

- The point values of the genera by the arts students are not closer to each other, contrary to the characters of other examined variables.



The results of PIK in the two groups after genera



The results of PIK in the five groups after genera

The results of the groups in the sample on the examined fields

Groups	N	Average fam. backgr. index	Average perform. at school	Space-ability average	Average creativity	Average emotio-nal intell.	Average PIK (Psych.Imm.comp.)	Intern. motiv. average	Refl. studying average	Self-contrl. studying average
Fine-App.arts.	60	71,78	71,00	30,83	43,35	41,06	72,46	38,28	38,93	48,27
Music	60	78,68	77,00	25,00	30,78	48,05	73,92	39,55	38,58	51,83
Dance	60	69,2	74,00	35,00	24,98	41,38	72,56	38,43	39,65	48,13
Acting	60	78,02	76,00	27,50	30,25	59,29	75,29	40,42	39,12	52,78
Control group	60	59,17	63,00	10,00	26,30	36,59	69,89	37,23	38,15	46,20
Total	300	71,45	72,20	25,67	31,13	45,27	72,83	38,78	38,89	49,44

The results of the groups of arts and non-arts students in the sample on the examined fields

Groups	N	Average fam. backgr. index	Average perform. at school	Space-ability average	Average creativity	Average emotio-nal intell.	Average PIK (Psych.Imm.comp.)	Intern. motiv. average	Refl. studying average	Self-contrl. studying average
Arts student	240	74,53	74,50	29,58	32,34	47,45	73,56	49,81	39,07	50,25
Non-arts student	60	59,17	63,00	10,00	26,30	36,59	69,89	37,23	38,15	46,20
Total	300	71,45	72,20	25,67	31,13	45,27	72,83	38,78	38,89	49,44

From the results of the PI research one can learn that there are significant differences between the arts students and those who are not studying arts at all.

CONCLUSIONS

- The development of the *creativity* is followed up in the creativity process by observing the art educators but it takes much time and it is difficult to compare them. The judgement of creativity is not too much useful without the explanation of the factors. The results of the examination of the tasks connecting to the Körös test in the two groups are not significant (with the exception of fluency), this way they only show tendencies and the conclusions only affect the groups that were examined. In the examined age of life, the „good creativity" in the groups of students studying fine and applied arts and acting appears better. From the point of view of art education, one can consider as significant result that the difference between the sexes is less by the art students than that by those who are not studying any art.

- The development of *space-perception* as a subject appears in the drawing lessons, in its element as a part of mathematics (in the geometry) but it is present in the subjects only a little. In my examinations, the poor result of the students who do not deal with artists and the fact that the spatial experiences are verbally transmitted so

poor even by the students dealing with art are frightening. The ability of the girls who take part in the art education is better than that of the boys not dealing with arts; that is the reason why the artistic occupations can have a serious effect on the development of space-perception. It would be useful to develop the space-perception through more appropriate programmes and to use the effect of dance education on the development of space-perception and the possibilities that are included in it through introducing the dance education into the public education.

• Because of the more intensive development of the *emotional intelligence,* beside the traditional method of cognition it is also important to recognise the students through tests because the method of observation is slowly, subjective and it is less appropriate for the cognition of the hidden emotions. The artistic activity and the emotional intelligence are in close interaction with each other. While, by the one field of arts (by actors) the cognition and transmission of emotions is emphasized much more, on other fields of arts (by dancers and musicians) the control of emotions becomes more emphasized. One important statement of my researches is the similarity of the emotional intelligence performance of the boys and girls who are studying arts.

• The values of the *psychological immune competence* of those who are studying arts are higher than that of the students who are not. In case of the students who are studying and who are not, the most significant difference can be observed by the abilities for Source-monitoring, Source-mobilizing, Source-creating, the Persistence and the Optimistic way of thinking. The importance of these abilities is also emphasized by the teachers in the interviews because without them it is difficult to set the targets and to fight for them. Very important result of my research is that those groups are the most successful in studying by which we can find the highest level of psychological immune competence. In order to develop the psychological immune competence, preventing arts pedagogical programmes should be worked out for the groups of girls with poorer fighting abilities who are studying fine and applied arts and dance. The details of the measuring could give a basis for this.

• The results of the researches for the motivation to study from the two sources are consonant (from the factors in connection with the psychological immune competence and the interviews with the teachers): the students who are studying arts are motivated to learn because they have stronger control ability, self-controlled studying and reflective self-controlled studying ability. Their emotions in connection with studying is more positive, they have a stronger internal control and their self-estimation is higher. The biggest difference between the two groups can be found in the self-controlling ability and the ability for construction, the smallest difference is in the controlling ability. From the students who are studying arts rise above the others those who are studying acting, as far as the self-controlled studying, the internal motivation and the non-conformity are concerned, the musicians do the same in the reflective studying and studying control-abilities and those who are studying dance in the positive attitude.

SUMMERIZING

- The students who are studying arts have much higher values on the field of psychological immune competence and emotional intelligence and they have better space-perception, higher creativity and these influence their attitude positively.
- By the two sexes, with the exception of the psychological immune competence, the difference between the abilities and performances of the girls and boys who are studying arts is less dominant than in case of the boys and girls who are not studying arts.

The novelty of my research is that nobody made any examination with these samples, methods and tools of measurements until now.

I consider my reseraches as successful because the results:

- can assist the training/education of arts differently (both in the development of programmes of different levels and in the daily praxis as well);
- they indicate where further researches are needed;
- they show that the examined abilities also have to be developed by those who are not studying arts because they could have disadvantages by the choose of career;

The unexpected proceeds of my work are that my results:

- can be included in the development plans of the children who have average abilities on the field of arts;
- in the general teacher training and further training.

I not only consider as a result of my researches that the description of characters are born but the complex and detailed coupling of the concrete measuring and statistical techniques, tools of measurement and the PC application of the SPSS statistical programme too.